ERRATA – WEST LOUISVILLE AIR TOXICS STUDY RISK ASSESSMENT
This errata presents corrections to errors that were found with the final report.

Miscellaneous Changes

Section 2.9 Chickasaw Park (Private Residence): WLATS Site 9
3rd paragraph, p. 28. Replace the sentence that begins "Two other VOCs detected…." with "Two VOCs detected at this site, 1,2,3 trichlorobenzene and 1,1,2-trichloroethane, exhibited the highest concentrations measured in the monitoring program."

Section 4.1 Chronic Toxicity
2nd paragraph, p. 46. Replace the first sentence with "Established toxicity data were not available for some COPCs, therefore, no risk estimates were generated for these compounds."

Section 4.2 Acute Toxicity
Acute Exposure Guideline Levels (AEGLs), p. 49. Delete the last sentence which reads "AEGLs are currently under review and were used with discretion".

Section 5.3 Risk Characterization Summary
3rd paragraph, p. 87. Replace the last sentence with "Similar graphs are presented in Appendix E for all COPCs that were a risk driver for at least one monitor in the WLATS network.

Appendix E Graphs of Risk Estimates for Risk Drivers Add the attached graphs under 95% UCL Cancer COPC for methylene chloride and formaldehyde.

Chloroprene Errata

The toxicity data and therefore risk assessment for chloroprene (2-chloro-1,3-butadiene) was inadvertently omitted. With the chloroprene update, changes need to be made in various sections of the report. Those changes are highlighted.

Executive Summary
Paragraphs 5 and 7, p. vii. Replace with the following:
The non-cancer health impacts were evaluated by calculating a hazard quotient (HQ) for each COPC, and then summing the HQs at a location to determine the overall impact in the form of a Hazard Index (HI). If the value of the HQ is less than 1, then an adverse health impact from the exposure is unlikely. Similarly, if the HI for a monitor location is below a value of 1, then the cumulative impact from all of the COPCs is unlikely to result in an adverse health impact. For the median exposure case, non-cancer HIs ranged from a high of 1.82 at Site 2b to a low of 0.07 at Site 6, for VOCs only. For all COPCs, the median exposure case HI ranged from a high of 2.47 at Site 2b, to a low of 0.25 at Site

11. For the 95% UCL exposure case, the HIs for VOCs only ranged from a high of 19.1 at Site 2a, to a low of 0.09 at Site 6. For all COPCs, the HI for the 95% UCL exposure case ranged from a high of 19.9 at Site 2a, to a low of 0.50 at Site 6. While several HIs exceeded a value of 1, these instances were due to the concentrations of 1,3-butadiene and chloroprene, which were the only COPCs to have an HQ that exceeded a value of 1, and only for the 95% UCL exposure case. Thus there is a potential for adverse health impacts based on the air concentrations of 1,3-butadiene and chloroprene for the 95% UCL exposure case.

For the median non-cancer health impacts at residential monitors, the HI for VOCs only ranged from 0.76 at Site 3 to 0.25 at Site 11, while the HI for all COPCs ranged from 1.25 at Site 3 to 0.25 at Site 11. When looking at VOCs only, the median exposure case HI for all residential monitors was greater than for the background monitors. When looking at all COPCs, the median exposure case HI for several residential monitors was below the background monitors, but unlike the background monitors, these residential monitors had data for VOCs only. The results of the median non-cancer risk evaluation for the residential monitors indicate that adverse health impacts are unlikely. For the 95% UCL exposure case the HI ranged for residential monitors ranged from a high of 5.07 at Site 7 to a low of 0.57 at Site 4 when looking at VOCs only. For all COPCs, the 95% UCL exposure case HI at residential monitors ranged from a high of 5.07 at Site 7 to a low of 1.06 at Site 9. A comparison of the 95% UCL exposure case HI for the background monitors versus the residential monitors shows that the HIs at all residential monitors exceeds the HIs for the background monitors when looking at both VOCs only and for all COPCs. The results of the 95% UCL exposure case for non-cancer health impacts indicate a potential for adverse health impacts at all monitor locations except background monitors (Sites 5 and 6) due to exposure to 1,3-butadiene and chloroprene. It should be noted that the 95% UCL exposure case will likely overestimate the true risk to the general population for reasons that are discussed in the risk assessment.

5.3 Risk Characterization Summary

Paragraphs 6 and 7, p. 88. Replace with the following:

The non-cancer HI for the median exposure case across the WLATS network ranged from 1.82 to 0.07 for VOCs only, and from 2.47 to 0.25 for all COPCs. The maximum impact occurred at Site 2b for both VOCs only and for all COPCs. For residential monitors, the HI for VOCs only ranged from 0.76 at Site 3 to 0.25 at Site 11, while the HI for all COPCs ranged from 1.25 at Site 3 to 0.25 at Site 11. When looking at VOCs only, the median exposure case HI for all residential monitors was greater than for the background monitors. When looking at all COPCs, the median exposure case HI for several residential monitors was below the background monitors, but unlike the background monitors, these residential monitors had data for VOCs only.

For the 95% UCL exposure case, the non-cancer HIs for the WLATS network ranged from 19.1 to 0.09 for VOCs only, and from 19.9 to 0.50 for all COPCs. The maximum impact occurred at Site 2a for both VOCs only and for all COPCs. For residential monitors, the 95% UCL exposure case HI ranged from a high of 5.07 at Site 7 to a low of 0.57 at Site 4 when looking at VOCs only. For all COPCs, the 95% UCL exposure case

HI at residential monitors ranged from a high of 5.07 at Site 7 to a low of 1.06 at Site 9. A comparison of the 95% UCL exposure case HI for the background monitors versus the residential monitors shows that the HIs at all residential monitors exceeds the HIs for the background monitors when looking at both VOCs only and for all COPCs.

7.1 Chronic Risk Characterization

3rd paragraph, p. 130. Replace with the following:

For the non-cancer health assessment, an HI of 1 was exceeded at four of 12 monitors for the median exposure case (i.e., Sites 1, 2a, 2b and 3), and at all but the two background monitors for the 95% UCL exposure case. The maximum impact for the non-cancer health impacts occurred at Site 2b for median cases and Site 2a for 95% UCL cases. The highest residential impacts occurred at Site 3 for the median exposure case and Site 7 for the 95% UCL exposure case. This analysis was based on the conservative assumption that all of the COPCs for a monitor location had the same critical effect. For the median exposure case, none of the HQs associated with an individual COPC at a monitor exceeded a value of 1. Furthermore, when HIs were calculated on the basis of similar critical effects, none of these exceeded a value of 1. This would indicate that under the median exposure case, adverse health impacts would not be likely. For the 95% UCL exposure case, only the HQ for 1,3-butadiene and/or chloroprene exceeded a value of 1, which occurred at five monitors (i.e., Sites 2a, 2b, 3, 7 and 8). This indicates that there is a potential for an adverse health impact associated with exposure to 1,3-butadiene and/or chloroprene at these monitor sites, based on the 95% UCL exposure case.

5.1.1 through 5.1.12

Text for the specific sites was not updated to reflect the addition of chloroprene. Please refer to the updated tables below for the risk information.

Tables 4-2 and 4-3

The duplicated listing for chloroprene is deleted.

Table 5-5 through 5-8

Replacement tables are provided which include the risk from exposure to chloroprene.

Table 4-2 Non-cancer Toxicity Values for COPCs

COMPOUND	CAS NO.	Oral RfD (mg/kg-d)	Source	Date	Oral RfD UF / MF [1]	Inh RfC (mg/m3)	Source	Date	Inh RfC UF / MF [1]
CHLORO-1,3-BUTADIENE, 2-(CHLOROPRENE)	126998	--	--	--	--	7.0E-03	HEAST	07/01/97	300
~~CHLOROPRENE~~	~~126998~~	~~--~~	~~--~~	~~--~~	~~--~~	~~7.0E-03~~	~~HEAST~~	~~07/01/97~~	~~300~~

Table 4-3 Non-cancer Critical Effect

COMPOUND	Source	Critical Effect for Derivation of Toxicity Value	Target Organs for Other Inhalation Chronic Effects									
			NEUR	RSP	CARD	DEV	SKIN	HEM	IMM	RPR	REN	HEP
CHLORO-1,3-BUTADIENE, 2-(CHLOROPRENE)	HEAST	Olfactory epithelial degeneration		X	X				X		X	X
~~CHLOROPRENE~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~

TABLE 5-5
MEDIAN NON-CANCER RISK EXCEEDANCES AND CRITICAL EFFECT

	WLATS Site 1 EPA Site ID 1		WLATS Site 2a EPA Site ID 2		WLATS Site 2b EPA Site ID 3		WLATS Site 3 EPA Site ID 4		WLATS Site 4 EPA Site ID 5	
Compound	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk
FORMALDEHYDE	1.3E-01	12.2%	1.1E-01	6.2%	1.7E-01	6.8%	1.3E-01	10.6%	1.3E-01	14.6%
1,3-BUTADIENE	1.7E-01	15.1%	5.0E-01	27.4%	9.5E-01	38.5%	5.4E-01	43.0%	1.4E-01	15.8%
CHLOROPRENE	1.6E-01	14.4%	5.6E-01	31.2%	7.3E-01	29.6%				
ACRYLONITRILE										
MANGANESE	3.0E-01	27.5%	3.1E-01	17.2%	3.0E-01	12.2%	2.1E-01	16.8%	2.8E-01	30.7%
ALL OTHER COMPOUNDS	3.3E-01	30.7%	3.3E-01	18.0%	3.2E-01	12.9%	3.7E-01	29.6%	3.5E-01	38.9%
CUMULATIVE RISK	1.1E+00		1.8E+00		2.5E+00		1.3E+00		9.1E-01	

TABLE 5-5 (con't)
MEDIAN NON-CANCER RISK EXCEEDANCES AND CRITICAL EFFECT

	WLATS Site 5 EPA Site ID 6		WLATS Site 6 EPA Site ID 7		WLATS Site 7 U of L Site ID D		WLATS Site 8 U of L Site ID M		WLATS Site 9 U of L Site ID I	
Compound	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk
FORMALDEHYDE										
1,3-BUTADIENE					3.0E-01	55.2%	2.0E-01	60.1%		
CHLOROPRENE										
ACRYLONITRILE									1.4E-01	51.7%
MANGANESE	1.4E-01	32.0%								
ALL OTHER COMPOUNDS	2.9E-01	68.0%	3.1E-01	100.0%	2.5E-01	44.8%	1.3E-01	39.9%	1.3E-01	48.3%
CUMULATIVE RISK	4.3E-01		3.1E-01		5.5E-01		3.3E-01		2.7E-01	

TABLE 5-5 (con't)
MEDIAN NON-CANCER RISK EXCEEDANCES AND CRITICAL EFFECT

	WLATS Site 10 U of L Site ID K		WLATS Site 11 U of L Site ID N		WLATS Site 12 U of L Site ID F		
Compound	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Critical Effect
FORMALDEHYDE							Respiratory
1,3-BUTADIENE	1.9E-01	47.6%			3.0E-01	53.0%	Reproductive
CHLOROPRENE							Hepatic
ACRYLONITRILE					1.2E-01	21.2%	Respiratory
MANGANESE							Neurological
ALL OTHER COMPOUNDS	2.1E-01	52.4%	2.5E-01	100.0%	1.5E-01	25.8%	
CUMULATIVE RISK	4.0E-01		2.5E-01		5.7E-01		

TABLE 5-6
MEDIAN NON-CANCER RISK EXCEEDANCES AND CRITICAL EFFECT - VOC ONLY

	WLATS Site 1 EPA Site ID 1		WLATS Site 2a EPA Site ID 2		WLATS Site 2b EPA Site ID 3		WLATS Site 3 EPA Site ID 4		WLATS Site 4 EPA Site ID 5	
Compound	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk
1,3-BUTADIENE	1.7E-01	33.9%	5.0E-01	41.4%	9.5E-01	52.1%	5.4E-01	71.1%	1.4E-01	43.9%
CHLOROPRENE	1.6E-01	32.3%	5.6E-01	47.2%	7.3E-01	40.0%				
ACRYLONITRILE										
ALL OTHER VOC COMPOUNDS	1.6E-01	33.8%	1.4E-01	11.3%	1.4E-01	7.9%	2.2E-01	28.9%	1.8E-01	56.1%
VOC RISK	4.9E-01		1.2E+00		1.8E+00		7.6E-01		3.3E-01	

TABLE 5-6 (con't)
MEDIAN NON-CANCER RISK EXCEEDANCES AND CRITICAL EFFECT - VOC ONLY

	WLATS Site 5 EPA Site ID 6		WLATS Site 6 EPA Site ID 7		WLATS Site 7 U of L Site ID D		WLATS Site 8 U of L Site ID M		WLATS Site 9 U of L Site ID I	
Compound	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk
1,3-BUTADIENE					3.0E-01	55.2%	2.0E-01	60.1%		
CHLOROPRENE										
ACRYLONITRILE									1.4E-01	51.7%
ALL OTHER VOC COMPOUNDS	8.1E-02	100.0%	7.4E-02	100.0%	2.5E-01	44.8%	1.3E-01	39.9%	1.3E-01	48.3%
VOC RISK	8.1E-02		7.4E-02		5.5E-01		3.3E-01		2.7E-01	

TABLE 5-6 (con't)
MEDIAN NON-CANCER RISK EXCEEDANCES AND CRITICAL EFFECT - VOC ONLY

	WLATS Site 10 U of L Site ID K		WLATS Site 11 U of L Site ID N		WLATS Site 12 U of L Site ID F		
Compound	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Critical Effect
1,3-BUTADIENE	1.9E-01	47.6%			3.0E-01	53.0%	Reproductive
CHLOROPRENE							Hepatic
ACRYLONITRILE					1.2E-01	21.2%	Respiratory
ALL OTHER VOC COMPOUNDS	2.1E-01	52.4%	2.5E-01	100.0%	1.5E-01	25.8%	
VOC RISK	4.0E-01		2.5E-01		5.7E-01		

TABLE 5-7
95% UCL NON-CANCER RISK EXCEEDANCES AND CRITICAL EFFECT

	WLATS Site 1 EPA Site ID 1		WLATS Site 2a EPA Site ID 2		WLATS Site 2b EPA Site ID 3		WLATS Site 3 EPA Site ID 4		WLATS Site 4 EPA Site ID 5	
Compound	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk
FORMALDEHYDE	3.6E-01	13.6%	1.7E-01	0.9%	2.2E-01	1.2%	2.7E-01	5.9%	1.8E-01	12.0%
1,3-BUTADIENE	5.0E-01	18.9%	4.9E+00	24.5%	8.3E+00	44.5%	3.1E+00	67.7%	2.8E-01	18.5%
CHLOROPRENE	7.9E-01	29.8%	1.4E-01	69.7%	9.1E+00	49.2%	4.1E-01	8.8%	1.0E-01	6.7%
ACRYLONITRILE										
BROMOFORM										
CARBON DISULFIDE										
TOLUENE			1.3E-01	0.7%	1.3E-01	0.7%				
MANGANESE	4.7E-01	17.6%	4.2E-01	2.1%	4.1E-01	2.2%	3.3E-01	7.1%	5.1E-01	33.4%
ALL OTHER COMPOUNDS	5.3E-01	20.1%	4.4E-01	2.2%	4.0E-01	2.1%	4.9E-01	10.5%	4.5E-01	29.4%
CUMULATIVE RISK	2.7E+00		2.0E+01		1.9E+01		4.6E+00		1.5E+00	

TABLE 5-7 (con't)
95% UCL NON-CANCER RISK EXCEEDANCES AND CRITICAL EFFECT

	WLATS Site 5 EPA Site ID 6		WLATS Site 6 EPA Site ID 7		WLATS Site 7 U of L Site ID D		WLATS Site 8 U of L Site ID M		WLATS Site 9 U of L Site ID I	
Compound	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk
FORMALDEHYDE	1.6E-01	21.8%								
1,3-BUTADIENE					3.1E+00	61.1%	1.9E+00	60.5%	5.4E-01	51.0%
CHLOROPRENE					2.5E-01	4.9%				
ACRYLONITRILE					4.8E-01	9.5%	3.1E-01	10.1%	2.1E-01	20.0%
BROMOFORM					1.6E-01	3.2%				
CARBON DISULFIDE					1.5E-01	3.0%				
TOLUENE					5.1E-01	10.0%	5.8E-01	19.0%	1.5E-01	13.7%
MANGANESE	2.8E-01	38.7%	1.7E-01	34.1%						
ALL OTHER COMPOUNDS	2.9E-01	39.5%	3.3E-01	65.9%	4.2E-01	8.2%	3.2E-01	10.4%	1.6E-01	15.2%
CUMULATIVE RISK	7.2E-01		5.0E-01		5.1E+00		3.1E+00		1.1E+00	

TABLE 5-7 (con't)
95% UCL NON-CANCER RISK EXCEEDANCES AND CRITICAL EFFECT

	WLATS Site 10 U of L Site ID K		WLATS Site 11 U of L Site ID N		WLATS Site 12 U of L Site ID F		
Compound	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Non-cancer Risk	% Contribution to Cumulative Risk	Critical Effect
FORMALDEHYDE							Respiratory
1,3-BUTADIENE	8.4E-01	51.5%	9.7E-01	60.8%	8.9E-01	61.1%	Reproductive
CHLOROPRENE	3.3E-01	20.5%	2.0E-01	12.6%	1.2E-01	8.4%	Hepatic
ACRYLONITRILE	1.8E-01	10.9%	1.7E-01	10.5%	3.0E-01	20.7%	Respiratory
BROMOFORM							Hepatic
CARBON DISULFIDE							Neurological
TOLUENE	1.2E-01	7.7%	1.0E-01	6.5%			Neurological
MANGANESE							Neurological
ALL OTHER COMPOUNDS	1.5E-01	9.4%	1.5E-01	9.6%	1.4E-01	9.8%	
CUMULATIVE RISK	1.6E+00		1.6E+00		1.5E+00		

TABLE 5-8
95% UCL NON-CANCER RISK EXCEEDANCES AND CRITICAL EFFECT - VOC ONLY

	WLATS Site 1 EPA Site ID 1		WLATS Site 2a EPA Site ID 2		WLATS Site 2b EPA Site ID 3		WLATS Site 3 EPA Site ID 4		WLATS Site 4 EPA Site ID 5	
Compound	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk
1,3-BUTADIENE	5.0E-01	31.7%	4.9E+00	25.6%	8.3E+00	46.6%	3.1E+00	82.6%	2.8E-01	49.8%
CHLOROPRENE	7.9E-01	49.9%	1.4E+01	72.9%	9.1E+00	51.6%	4.1E-01	10.7%	1.0E-01	18.1%
ACRYLONITRILE										
BROMOFORM										
CARBON DISULFIDE										
TOLUENE			1.3E-01	0.7%	1.3E-01	0.8%				
ALL OTHER VOC COMPOUNDS	2.9E-01	18.4%	1.6E-01	0.8%	1.8E-01	1.0%	2.5E-01	6.7%	1.8E-01	32.1%
VOC RISK	1.6E+00		1.9E+01		1.8E+01		3.8E+00		5.7E-01	

TABLE 5-8 (con't)
95% UCL NON-CANCER RISK EXCEEDANCES AND CRITICAL EFFECT - VOC ONLY

	WLATS Site 5 EPA Site ID 6		WLATS Site 6 EPA Site ID 7		WLATS Site 7 U of L Site ID D		WLATS Site 8 U of L Site ID M		WLATS Site 9 U of L Site ID I	
Compound	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk
1,3-BUTADIENE					3.1E+00	61.1%	1.9E+00	60.5%	5.4E-01	51.0%
CHLOROPRENE					2.5E-01	4.9%				
ACRYLONITRILE					4.8E-01	9.5%	3.1E-01	10.1%	2.1E-01	20.0%
BROMOFORM					1.6E-01	3.2%				
CARBON DISULFIDE					1.5E-01	3.0%				
TOLUENE					5.1E-01	10.0%	5.8E-01	19.0%	1.5E-01	13.7%
ALL OTHER VOC COMPOUNDS	1.3E-01	100.0%	8.9E-02	100.0%	4.2E-01	8.2%	3.2E-01	10.4%	1.6E-01	15.2%
VOC RISK	1.3E-01		8.9E-02		5.1E+00		3.1E+00		1.1E+00	

TABLE 5-8 (con't)
95% UCL NON-CANCER RISK EXCEEDANCES AND CRITICAL EFFECT - VOC ONLY

	WLATS Site 10 U of L Site ID K		WLATS Site 11 U of L Site ID N		WLATS Site 12 U of L Site ID F		
Compound	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Non-cancer Risk	% Contribution to VOC Only Risk	Critical Effect
1,3-BUTADIENE	8.4E-01	51.5%	9.7E-01	60.8%	8.9E-01	61.1%	Reproductive
CHLOROPRENE	3.3E-01	20.5%	2.0E-01	12.6%	1.2E-01	8.4%	Hepatic
ACRYLONITRILE	1.8E-01	10.9%	1.7E-01	10.5%	3.0E-01	20.7%	Respiratory
BROMOFORM							Hepatic
CARBON DISULFIDE							Neurological
TOLUENE	1.2E-01	7.7%	1.0E-01	6.5%			Neurological
ALL OTHER VOC COMPOUNDS	1.5E-01	9.4%	1.5E-01	9.6%	1.4E-01	9.8%	
VOC RISK	1.6E+00		1.6E+00		1.5E+00		